WHAT IS CLAIMED IS:

1.   An electronic control unit comprising:

a non-volatile memory, which allows electrical updating of data with a limitation in the number of times of data entry, for continuously storing continuous storage object data required to be stored continuously even when electrical power supply is stopped, wherein the continuous storage object data is increased or decreased in its value depending on a specified rule and is changed in its value by a positive number N at a maximum during a single operation period from power on to power off; and

a control means for executing, on finding that the value of the continuous storage object data is changed in its value by N during the single operation period, a write process to write the continuous storage object data thus changed in its value by N to the non-volatile memory, and for not executing the process to write thereafter the continuous storage object data which has been changed in its value only by N to the non-volatile memory during the same operation period.

2.   The electronic control unit according to claim 1, further comprising:

a standby RAM supplied with an electric power for a continuous storage of data,

wherein the control means includes a periodical storage means for periodically storing the continuous storage object

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data to the standby RAM during the operation period until at least the data is entered to the non-volatile memory with the write process, and

wherein the control means further includes a preliminary write implementation means for writing the continuous storage object data, not yet entered to the non-volatile memory with the write process during a preceding operation period, to the non-volatile memory from the standby RAM when an electric power supply is turned on.

3.   The electronic control unit according to claim 2, wherein the control means further includes a determination means for determining whether the data in the standby RAM is normal when the electric power supply is turned on, and for inhibiting the operation of the preliminary write implementation means when the data is determined to be abnormal.

4.   The electronic control unit according to claim 1, wherein:

the electric power supply is made when a power supply switch is turned on or when a switching means provided externally is turned on for a power supply;

the control means continues, when powered on and starts its operations, the operations even after the power supply switch is turned off by turning on the switching means for the power supply; and

the control means enters the continuous storage object data to the non-volatile memory and thereafter turns off the switching means, if the continuous storage object data which has been changed in its value only by N but is not yet entered to the non-volatile memory during the present operation period exists when the power supply switch is turned off.

5.   The electronic control unit according to claim 1, wherein:

the electric power is supplied when the power supply switch is turned on or when a switching means for a power supply provided externally is turned on;

the control means continues, when powered on and starts its operations, the operations even after the power supply switch is turned off by turning on the switching means for the power supply; and

when the power supply switch is turned off, the continuous storage object data which is not yet entered to the non-volatile memory with the write process during the present operation period is entered to the non-volatile memory, and thereafter the switching means is turned off.

6.   The electronic control unit according to claim 4, wherein:

the control means is provided to control an engine of a vehicle; and

the power supply switch is an ignition switch of the vehicle.

7.   An electronic control unit for controlling on-board devices of a vehicle, the unit comprising:

a detecting means for detecting that the vehicle is in a predetermined running condition;

a diagnostic means for implementing diagnosis of the on-board devices when the predetermined condition is satisfied;

a non-volatile memory which can electrically update stored content;

an update means for executing, during the period from a start to an end of control operations for the on-board devices, a process to update the number of times of operations stored in the non-volatile memory to a value updated by one when the predetermined running condition is detected with the detecting means, and executing the process to update the number of times of diagnosis stored in the non-volatile memory to a value updated by one when the diagnosis is implemented with the diagnostic means; and

update process inhibiting means for inhibiting the update process to the updated number of times of operation and the number of times of diagnosis after at least any one of the update processes of the number of times of operation or the number of times of diagnosis has been executed by the update means.

8.   The electronic control unit according to claim 7, wherein:

a plurality of on-board devices exist as the diagnosis objects for implementation of the diagnosis by the diagnostic means;

the predetermined condition is different for the diagnosis objects;

the number of times of operation and the number of times of diagnosis to be stored in the non-volatile memory are stored in different regions depending on the diagnosis objects; and

the update process inhibiting means does not execute the update process after the update process of the number of times of operation and the number of times of diagnosis as the diagnosis objects are executed.

9.   The electronic control unit according to claim 7, wherein:

the diagnostic means is connectable with a diagnostic tool provided at an external side of the vehicle; and

an output means is further provided to output the number of times of operations and the number of times of diagnosis stored in the non-volatile memory to the diagnostic tool when the diagnostic tool has requested an output of the number of times of operations and the number of times of diagnosis.